

What is claimed is:

1. A method for fabricating a nonradiative dielectric waveguide, comprising the steps of:

5 forming a first conductive film on a substrate;

forming a first dielectric film on said conductive film;

forming a groove for a transmission line passing through said first dielectric film;

10 embedding a second dielectric, whose dielectric constant is larger than that of said first dielectric film, into said groove formed passing through said first dielectric film; and

15 forming a second conductive film on said first dielectric film and said second dielectric film.

2. A method for fabricating a nonradiative dielectric waveguide as claimed in claim 1, wherein a MEMS circuit is fabricated into said substrate.

20 3. A method for fabricating a nonradiative dielectric waveguide, comprising the steps of:

forming a first conductive film on a substrate;

25 forming on said first conductive film a second dielectric film whose dielectric constant is larger than that of a first dielectric film;

etching said second dielectric film to form a transmission line;

30 embedding said first dielectric film in an area where said second dielectric film has been etched away; and

forming a second conductive film on said first dielectric film and said second dielectric film.

35 4. A method for fabricating a nonradiative dielectric waveguide as claimed in claim 3, wherein a MEMS circuit is fabricated into said substrate.

5. A method for fabricating a nonradiative dielectric waveguide, comprising the steps of:

forming a conductive film on a substrate;  
forming a first sacrificial film on said  
conductive film;

5 forming a groove for a transmission line  
passing through said first sacrificial film;

embedding a dielectric into said groove  
formed passing through said first sacrificial film;

forming a second sacrificial layer on said  
first sacrificial layer into which said dielectric has  
10 been embedded, and etching away said second sacrificial  
layer everywhere except a plurality of portions thereof;

forming a conductive film in an area where  
said second sacrificial layer has been etched away; and

15 etching away said first and second  
sacrificial layers.

6. A method for fabricating a nonradiative  
dielectric waveguide as claimed in claim 5, wherein a  
MEMS circuit is fabricated into said substrate.

7. A method for fabricating a nonradiative  
20 dielectric waveguide, comprising the steps of:

forming a first dielectric film on a  
substrate;

forming a groove for a transmission line  
to such a depth that does not pass through said first  
25 dielectric film;

embedding a second dielectric, whose  
dielectric constant is larger than that of said first  
dielectric film, into said groove formed in said first  
dielectric film;

30 forming another first dielectric film on  
said first dielectric film and said second dielectric  
film;

forming two grooves one spaced apart from  
the other by a distance smaller than the width of said  
35 second dielectric, said grooves being formed down to said  
substrate in such a manner as to cut off both edges of  
said second dielectric; and

embedding a conductor into each of said two grooves.

8. A method for fabricating a nonradiative dielectric waveguide as claimed in claim 7, wherein a  
5 MEMS circuit is fabricated into said substrate.

9. A nonradiative dielectric waveguide comprising:  
a first conductive film formed on a substrate; a first  
dielectric film formed on said first conductive film; a  
second dielectric film surrounded by said first  
10 dielectric film and having a dielectric constant larger  
than that of said first dielectric film; and a second  
conductive film formed on said first and second  
dielectric films.

10. A nonradiative dielectric waveguide as claimed  
15 in claim 9, wherein a MEMS circuit is fabricated into  
said substrate.

11. A nonradiative dielectric waveguide comprising:  
a pair of conductors formed vertically on a substrate; a  
pair of first dielectric films formed between said  
20 conductors and parallel to said substrate; and a second  
dielectric film flanked by said first dielectric films  
and having a dielectric constant larger than that of said  
first dielectric film.

12. A nonradiative dielectric waveguide as claimed  
25 in claim 11, wherein a MEMS circuit is fabricated into  
said substrate.